

DETAILED ACTION

The examiner acknowledges receipt of Applicant's Appeal Brief, filed on 13 August 2009.

RESPONSE TO ARGUMENTS - 35 USC § 103

The rejections of claims 1, 6-13, 18-26, 28-34 and 37 under 35 U.S.C. 103(a) as being unpatentable over Margolskee (US-5,817,759, issued 6 October 1998) in view of Yao et al. (US-7,041,457, issued 9 May 2006) and further in view of Ruiz-Avila et al. (PNAS. July 17 2001. vol.98; No.15: 8868-8873) are withdrawn in response to the applicant's Appeal Brief.

The applicant's arguments provided in the Appeal Brief have been fully considered and are persuasive. The applicant has provided two specifically strong arguments indicating non-obviousness:

(1) There is an unexpected characteristic of "at least double the signal strength" associated with the 44 amino acid swap of the Gustducin C-terminus for the 44 amino acid C-terminus of the G_{α15} or G_{α16}. The examiner was persuaded by this argument because he could find no suggestion in the art that associated this characteristic with this structure. The applicant has incorporated this non-obvious functional language into independent claims 1 and 18. This suggests these independent claims and the claims dependent from them would be allowable.

(2) the few amino acids between 38-44 amino acids from the C-terminus Gustducin are non-obvious (and consequentially, the corresponding polynucleotide portion of SEQ ID NO:1 are non-obvious). The examiner was persuaded by this

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argument because SEQ ID NO:1 is novel. No prior art exists for this sequence. The examiner has cited art that justifies substituting the last 37 C-terminal amino acids of gustducin into the C-terminus of the $G_{\alpha 15}$ or $G_{\alpha 16}$. This is justified because (1) the last 37 C-terminal amino acids of gustducin are 100% identical to the last 37 C-terminal amino acids of transducing and (2) the cited art teaches a chimeric G-protein comprising $G_{\alpha 15}$ or $G_{\alpha 16}$ with a replacement of the 44 C-terminal amino acids of transducin. However, transducin and gustducin are not 100% identical between 37-44 amino acids from the C-terminus. On this basis, the examiner finds these unique differences to be non-obvious. Certainly, the allowance of claim 2 and other claims which (1) recite SEQ ID NO:1 or (2) require 100% identity to the 44 c-terminal amino acids of SEQ ID NO:2 would be justified by this reasoning.

Therefore, the examiner hereby withdraws the rejection of claims 1, 6-13, 18-26, 28-34 and 37 under 35 USC 112, 1st paragraph and under 35 USC 103(a) as being unpatentable over Margolskee in view of Yao et al and further in view of Ruiz-Avila et al.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mark Marin on 1/7/2011.

The claims have been amended as follows: **Claims 21-26 are cancelled.**

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

The prosecution history provides evidence for allowability.

The examiner has explained under the Response to Argument for the Obviousness rejection, that (1) SEQ ID NO:1 is novel, (2) transducin and gustducin are not 100% identical between 37-44 amino acids from the C-terminus, and (3) there is a non-obvious characteristic associated with the chimeric G-proteins of claims 1 and 18. This conclusion justifies the allowance of claims 1, 6-13, 18-20, 28-36.

Claims 37-39 require that the chimeric G α 15/Gustducin44 and chimeric G α 16/Gustducin44 (1) comprise have a polypeptide sequence having 100% homology to the 44 C-terminal amino acids of SEQ ID NO:2 and (2) bind to one or more of the human bitter, sweet, and umami taste receptors. As described above, justifying the exact structure of G α 15/Gustducin44 and chimeric G α 16/Gustducin44 has not been possible for this examiner. Certainly, this structure in conjunction with the functional language makes these claims allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Claims 1, 6-13, 18-20 and 28-39 are allowed.

Examiner Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Long** whose telephone number is **571-272-9048**. The examiner can normally be reached on Monday - Friday, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Joseph Woitach** can be reached on **571-272-0739**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/SCOTT LONG/
Primary Examiner, Art Unit 1633